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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/580,495	05/30/2000	Alan Frank Graves	71493-750	8315

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EXAMINER

TRAN, DZUNG D

ART UNIT PAPER NUMBER

2633

DATE MAILED: 08/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/580,495

Applicant(s)

GRAVES ET AL.

Examiner

Dzung D Tran

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 4-14, 17, 18, 25-57 and 59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 15, 16, 19-24 and 58 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Specification*

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 15, 16, 19-22 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U.S. patent no. 6,559,984 in view of Turner et al. U.S. patent no. 6,449,068.

Regarding claims 1, 15, 16, 19-22 and 58, Lee clearly discloses in figure 5, a optical path monitoring with an optical switch (520) providing individual signal paths between a plurality of input ports and a plurality of output ports, said switch having a plurality of wavelength division multiplexers 540 for combining sets of individual switched optical signals into multiplexed switched optical signals (see figure 5), the system comprising:

a plurality of optical couplers (same as splitters) figure 5C, element 536;

a plurality of optical variable attenuator 535 (same as VOIC) for insertion into respective ones of the individual signal paths and for individually controlling the intensity

of optical signals present in said respective ones of the individual signal paths in accordance with respective intensity control signals; and

the feedback controller 538 (same as claimed equalizer) connected to the splitters 536 and to the optical variable attenuator 535, for producing an estimate of the optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power (col. 5, lines 37-51). Lee differs from claims 1, 15, 16, 20-22 and 58 of the present invention in that Lee does not specifically disclose the optical variable attenuator is controlled by a controller that connected to an output of a wavelength division multiplexer and to the optical variable attenuator (same as VOIC). Turner, from the same field of endeavor, discloses an optical power detector/controller 22 connected to an output of a wavelength division multiplexer 18 and to the optical variable attenuator 16 (same as VOIC) for equalizing the output power of the switch device 14. At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Turner in the system of Lee. One of ordinary skill in the art would have been motivated to do this in order to adjust the power level of each narrowband optical signal based upon the detected power level of each plurality of attenuated optical signal so as to equalize the power in each of the plurality of narrowband optical signal.

3. Claims 2, 3, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U.S. patent no. 6,559,984 in view of Turner et al. U.S. patent no. 6,449,068 and further in view of Taylor et al. U.S. patent no. 6,049,413.

Regarding claims 2 and 23, Lee and Turner do not disclose the equalizer comprises: for each of the optical splitters, a wavelength demultiplexer connected to an output of said splitter, for each wavelength demultiplexer, a plurality of optical receivers connected to said demultiplexer, for each optical receiver, a power estimator connected thereto and a common controller connected to each power estimator; said controller being adapted to read a power estimate from each power estimator and to generate said intensity control signals as a function thereof. Taylor in figure 12, discloses an optical system that includes a circuit for power monitoring comprises: a wavelength demultiplexer (1208), for each wavelength demultiplexer, a plurality of optical receivers (1210-1 to 1210-n) connected to said demultiplexer; for each optical receiver, a power estimator (1212-1 to 1212-n) connected thereto and a common controller (1214) connected to each power estimator for controlling the intensity (for example, by controlling the amplifier 1206-1 to 1206-n). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Taylor in the system of Lee and Turner. One of ordinary skill in the art would have been motivated to do this since power monitoring is well known in the art for adjusting or controlling the signal intensity so that the received powers are substantially equal.

Regarding claims 3 and 24, Taylor further discloses the receivers 1006 coupled to filter 1104 for outputting a narrower bandwidth.

4. Claims 1, 15, 16, 19-22 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art, figure 1 in view of Kosaka et al. U.S. patent no. 5,986,800.

Regarding claims 1, 15, 16, 19-22 and 58, Figure 1 of Prior Art clearly discloses a optical system with an optical switch (150) providing individual signal paths (170, 180) between a plurality of input ports and a plurality of output ports, said switch having a plurality of wavelength division multiplexers 130 for combining sets of individual switched optical signals into multiplexed switched optical signals. Prior Art, figure 1 differs from claims 1, 15, 16, 20-22 and 58 of the present invention in that Prior Art does not specific disclose a switch comprising:

a plurality of optical splitters, each being connectable to an output of a respective one of the wavelength division multiplexers;

a plurality of VOIC for insertion into respective ones of the individual signal paths and for individually controlling the intensity of optical signals present in said respective ones of the individual signal paths in accordance with respective intensity control signals; and

the equalizer connected to the splitters and to the VOIC, for producing an estimate of the optical power of each individual switched optical signal and generating the intensity control signals as a function of the estimates of optical power.

Kosaka, in figure 11, from the same field of endeavor, discloses an apparatus for adjusting optical output power at the respective wavelength comprising:

a optical splitters 12, being connectable to an output of the wavelength division multiplexers 19, an optical power controller 14 connected to an output of a wavelength

division multiplexer 19 and to the optical gain adjusters 17a, 17b, 17c (same as VOIC) for equalizing the power of each de-multiplexed wavelength. At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Kosaka in the system of Prior Art. One of ordinary skill in the art would have been motivated to do this in order to adjust the power level of each narrowband optical signal based upon the detected power level of each plurality of attenuated optical signal so as to equalize the power in each of the plurality of narrowband optical signal.

5. Claims 2, 3, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art, figure 1 in view of Kosaka et al. U.S. patent no. 5,986,800 and further in view of Taylor et al. U.S. patent no. 6,049,413.

Regarding claims 2 and 23, Prior Art and Kosaka do not disclose the equalizer comprises: for each of the optical splitters, a wavelength demultiplexer connected to an output of said splitter, for each wavelength demultiplexer, a plurality of optical receivers connected to said demultiplexer, for each optical receivers, a power estimator connected thereto and a common controller connected to each power estimator; said controller being adapted to read a power estimate from each power estimator and to generate said intensity control signals as a function thereof. Taylor in figure 12, discloses an optical system that include a circuit for power monitoring comprises: a wavelength demultiplexer (1208), for each wavelength demultiplexer, a plurality of optical receivers (1210-1 to 1210-n) connected to said demultiplexer; for each optical receivers, a power estimator (1212-1 to 1212-n) connected thereto and a common

controller (1214) connected to each power estimator for controlling the intensity (for example, by controlling the amplifier 1206-1 to 1206-n). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Taylor in the system of Prior Art and Kosaka. One of ordinary skill in the art would have been motivated to do this since power monitoring is well known in the art for adjusting or controlling the signal intensity so that the received powers are substantially equal.

Regarding claims 3 and 24, Taylor further discloses the receivers 1006 coupled to filter 1104 for outputting a narrower bandwidth.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-3, 15, 16, 19-24 and 58 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung Tran whose telephone number is (703) 305-0932.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jason Chan, can be reached on (703) 305-4729.



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The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



M. R. SEDIGHIAN  
PRIMARY EXAMINER